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09/874,520	06/04/2001	Hussein F. Salama	CISCO-3376	5228

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EXAMINER

SORRELL, ERON J

ART UNIT

PAPER NUMBER

2182

DATE MAILED: 11/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/874,520

Applicant(s)

SALAMA ET AL.

Examiner

Eron J Sorrell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-22, 24-34, 36-46 and 48-50 is/are rejected.
- 7) ☐ Claim(s) 11, 23, 35 and 47 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/15/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-8,13-30,25-32, and 37-44 are rejected under 35 U.S.C. 102(a) as being anticipated by Aune (WO 01/17199).

3. Referring to method claim 1, machine-readable medium claim 13, and apparatus claims 25 and 37, Aune teaches a method and apparatus for on-demand management of Internet Protocol (IP) address pools, the apparatus comprising:

an allocator to allocate an unused IP address from a local IP address pool designated for a remote domain if a request to connect to said remote domain is received, said local IP address pool comprising one or more of at least one subnet obtained from a global IP address pool, each of said at least one subnet specifying a contiguous set of one or more IP addresses, said allocator coupled to said local IP address pool (see lines 16-30 of page 4);

a deallocator to deallocate an IP address back to said local IP address pool if said IP address is unused, said deallocator coupled to said local IP address pool (see paragraph bridging pages 4 and 5); and

a monitor to apportion one or more of said at least one subnet between said global IP address pool and said local IP address pool based upon utilization of said local IP address pool, said monitor coupled to said local IP address pool and a global IP address pool interface (see lines 4-27 of page 5 and lines 5-11 of page 6).

4. Referring to method claim 2, machine-readable medium claim 14, and apparatus claims 26 and 38, Aune teaches the apparatus further comprises an IP address configurer to configure said local IP address pool with a subnet from said at least one subnet (see lines 16-30 of page 4).

5. Referring to method claim 3, machine-readable medium claim 15, and apparatus claims 27 and 39, Aune teaches the monitor comprises:

a utilization assessor to assess utilization of said local IP address pool, said utilization assessor coupled to said local IP address pool (see lines 4-20 of page 5);

a subnet requestor to request a subnet from said global IP address pool if utilization of said local IP address pool exceeds a first threshold (see lines 16-30 of page 4);

a subnet receiver to receive said requested subnet and to forward said requested subnet to said local IP address pool, said subnet receiver coupled to said local IP address pool and said global IP address pool interface (see 16-30 of page 4); and

a subnet returner to return a subnet to said local IP address pool if said utilization assessor indicates utilization of said local IP address pool is below a second threshold, said subnet returner coupled to said local IP address pool and said global IP address pool interface (see paragraph bridging pages 4 and 5).

6. Referring to method claim 4, machine-readable medium claim 16, and apparatus claims 28 and 40, Aune teaches the utilization assessor is further configured to poll said local IP address pool at predetermined intervals to obtain local IP address pool utilization information (see lines 21-27 of page 5).

7. Referring to method claim 5, machine-readable medium claim 17, and apparatus claims 29 and 41, Aune teaches the subnet

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requestor is further configured to request a subnet having first predetermined number of IP addresses (see abstract); and

the subnet returner is further configured to release a subnet having a second predetermined number of IP addresses (see abstract).

8. Referring to method claim 6-8, machine-readable medium claim 18-20, and apparatus claims 30-32 and 42-44 Aune teaches the subnet requestor is further configured to request a subnet having a size that is relative to a current subnet size or initial subnet size (see lines 16-30 of page 4 and lines 4-20 of page 5; note that the size of the subnet is dynamic and based on usage); and

the subnet returner is further configured to release a subnet having a size that is relative to said current subnet size or initial subet size (see line 31 of page 4 to line 27 of page 5).

9. Applicant is advised that should claims 6,18,30, and 42, respectively, be found allowable, claims 8,20,33, and 43, respectively, will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that

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they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim.

See MPEP § 706.03(k).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 9,10,21,22,33,34,45, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aune in view of Lin et al. (U.S. Patent No. 6,282,575 hereinafter "Lin").

12. Referring to method claims 9 and 10, machine-readable mediums claim 21 and 22, and apparatus claims 33,34,45, and 46, Aune fails to teach the subnet returner is further configured to remove the summarized route for said one or more subnet from a routing table associated with said local IP address pool and the subnet receiver is further configured to insert a route summary

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for said requested one or more subnet if said requested one or more subnet is received.

Lin teaches in an analogous system, the above limitations (see lines 1-28 of column 7).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the apparatus and method of Aune with the above teachings of Lin. One of ordinary skill in the art would have been motivated to make such modification in order to ensure the routers maintain the correct routing information as the system is reconfigured by allocating or deallocating IP addresses.

13. Claims 12, 24, 36, and 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aune in view of Applicant's admitted prior art (AAPA).

14. Referring to method claim 12, machine-readable medium claim 24, and apparatus claims 36 and 48, Aune teaches the apparatus and method comprise a remote domain (see figure 2 and lines 16-30 of page 4), however Aune fails to teach the remote domain comprising a virtual private network (VPN).

Applicant admits at paragraph 7 of page 4 of the instant application, that PPP sessions are typically terminated on a home gateway, at a remote domain such as a VPN.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the method and apparatus of Aune with AAPA. One of ordinary skill in the art would have been motivated to make such modification because PPP sessions are typically terminated at a VPN as admitted by the applicant.

15. Referring to apparatus claim 49, Aune fails to teach the global IP address pool comprises an Authentication, Authorization and Accounting (AAA) server and the global IP address interface comprises an AAA proxy configured to communicate with said AAA server using the RADIUS protocol.

Applicant admits at paragraph 6 of page 4 of the instant application, that AAA servers and the RADIUS protocol are typically used to authenticate and associate a user with a remote domain and assign an IP address to a remote user.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the apparatus and method of Aune with AAPA. One of ordinary skill in the art would have been motivated to make such modification

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because the use of AAA servers and RADIUS protocol are typically used to authenticate and associate a user with a remote domain and assign an IP address to a remote user as admitted by the applicant.

16. Referring to apparatus claim 50, Aune fails to teach the global IP address pool comprises Dynamic Host Configuration Protocol (DHCP) server and the global IP address interface comprises an Ring Access Controller client configured to communicate with said DHCP server using the DHCP protocol.

Applicant admits at paragraph 5 starting on page 3 of the instant application, that DHCP servers and the DHCP protocol are typically used to authenticate and associate a user with a remote domain and assign an IP address to a remote user.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the apparatus and method of Aune with AAPA. One of ordinary skill in the art would have been motivated to make such modification because the use of DHCP servers and DHCP protocol are typically used to authenticate and associate a user with a remote domain and assign an IP address to a remote user as admitted by the applicant.

Allowable Subject Matter

17. Claims 11,23,35, and 47 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references are cited to further show the state of the art as it pertains to IP address allocation:

U.S. Patent 6,799,204 to Baba et al. teaches edge routers comprising a local IP address pool.

U.S. Patent 6,577,628 to Hejza teaches address pools comprising contiguous addresses.

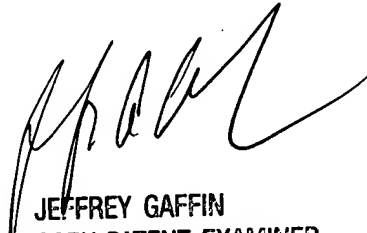
U.S. Publication 2002/0155827 teaches a global address pool and a plurality of local address pools, wherein addresses from the global address pool are apportioned to the plurality of local address pools based on usage.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eron J Sorrell whose telephone number is 571 272-4160. The examiner can normally be reached on Monday-Friday 9:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A Gaffin can be reached on 571 272-4146. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EJS
November 3, 2004



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